

WHAT IS CLAIMED IS:

- 1 1. A modular human habitat simulator comprising:
 - a housing having a rigid wall defining an
internal volume, a longitudinal axis, a
first opening and second opening being
5 opposed along the longitudinal axis, an
external surface, and the rigid wall
having an interior surface of generally
the shape of a deployed inflatable
shell internal surface of a modular
10 human habitat, and the internal volume
being substantially that of a deployed
inflatable modular human habitat
volume;

a first distal enclosure having a first end
15 and a second end being opposed along a
longitudinal axis, a first aperture on
the first end and a second aperture on
the second end forming a passage
therethrough, and the first distal
20 enclosure is connected to the housing
such that the passage aligns with the
first opening of the housing thereby

providing access to the internal
volume; and

25 a second distal enclosure having a first end
and a second end being opposed along a
longitudinal axis, a hollow interior,
and a first opening on the first end
and the second distal enclosure being
30 connected to the housing such that a
passageway is formed between the hollow
interior and the internal volume.

1 2. The modular human habitat simulator according
to claim 1 further comprising at least one longeron
fixedly attached to, and extending from, the first
distal enclosure through the internal volume and
5 fixedly attached to the second distal enclosure.

1 3. The modular human habitat simulator according
to claim 1 further comprising at least one window
extending through the rigid wall into the internal
volume.

1 4. The modular human habitat simulator according
to claim 1 further comprising an opening on the second
end of through the second distal enclosure thereby
forming a passage to the internal volume.

1 5. The modular human habitat simulator according

to claim 1 further including a portion of a simulated debris shield fixedly attached to the external surface.

1 6. The modular human habitat simulator according to claim 1 further including a plurality of simulated water bags fixedly attached to the interior surface.

1 7. The modular human habitat simulator according to claim 1 further comprising;

 a floor structure;

 means for supporting the floor structure;

5 and

 the floor structure extending substantially the length of the longitudinal axis and substantially dividing the internal volume into an upper internal space and
10 a lower internal space.

1 8. A modular human habitat simulator according to claim 7 further comprising at least one access opening in the floor structure.

1 9. The modular human habitat simulator according to claim 1 further comprising;

 a plurality of floor structures;

 means for supporting the plurality of floor

5 structure; and

the plurality of floor structures extending
substantially the length of the
longitudinal axis and substantially
dividing the internal volume into a
10 plurality of internal spaces.

1 10. A modular human habitat simulator
according to claim 9 further comprising at least one
access opening in at least one floor structure.

1 11. The modular human habitat simulator according
to claim 1 further including a plurality of cylinders
disposed within, and fixedly attached to, the first
distal enclosure.

1 12. The modular human habitat simulator according
to claim 1 further including a plurality of cylinders
disposed within, and fixedly attached to, the second
distal enclosure.

1 13. The modular human habitat simulator according
to claim 1 further including a plurality of cylinders
disposed along, and fixedly attached to, the external
surface of the first distal enclosure.

1 14. The modular human habitat simulator according
to claim 1 further including a plurality of cylinders
disposed along, and fixedly attached to, the external
surface of the second distal enclosure.

1 15. The modular human habitat simulator according
to claim 1 further including a plurality of simulated
panels fixedly attached to the interior surface.

1 16. The modular human habitat simulator according
to claim 1 further including a plurality of cylinders
fixedly attached to the interior surface.

1 17. A modular human habitat simulator
comprising:

 a housing having a substantially rigid wall
 defining an internal volume, a
5 longitudinal axis, a first opening and
 a second opening being opposed along
 the longitudinal axis, an external
 surface, and the substantially rigid
 wall having an interior surface of
10 generally the shape of a deployed
 inflatable shell internal surface of a
 modular human habitat, and the internal
 volume being substantially that of a
 deployed inflatable modular human
15 habitat volume;

 a first distal enclosure having a first end
 and a second end being opposed along a
 longitudinal axis, a first aperture on

the first end and a second aperture on
20 the second end forming a passage
therethrough, and the first distal
enclosure is connected to the housing
such that the passage aligns with the
first opening of the housing thereby
25 providing access to the internal
volume;

a second distal enclosure having a first end
and a second end being opposed along a
longitudinal axis, a hollow interior,
30 and a first opening on the first end
and the second distal enclosure being
connected to the housing such that a
passageway is formed between the hollow
interior and the internal volume; and

35 at least one longeron fixedly attached to,
and extending from, the first distal
enclosure through the internal volume
and fixedly attached to the second
distal enclosure.

1 18. A method of constructing a modular human
habitat simulator comprising the steps of;
providing a plurality of housing segments;

assembling the housing segments into a
5 housing having an internal volume, a
first opening and second opening
opposed along a longitudinal axis;
inserting at least one longeron into the
internal volume;
10 attaching a first distal enclosure having a
passage therethrough over the first
opening such that the internal volume
is accessible through the passage;
attaching the first distal enclosure to the
15 longeron;
attaching a second distal enclosure having a
a hollow interior over the second
opening such that a passageway is
formed between the internal volume and
20 the hollow interior; and
attaching the second distal enclosure to the
longeron.

1 19. A method of constructing a modular human
habitat simulator comprising the steps of;
providing a plurality of housing segments;
assembling the housing segments into a
5 housing having an internal volume, a

first opening and second opening
opposed along a longitudinal axis;
inserting at least one longeron into the
internal volume;
10 attaching a first distal enclosure having a
passage therethrough to the housing
such that the passage coincides with
the first opening of the housing;
attaching the first distal enclosure to the
15 longeron;
attaching a second distal enclosure having a
passageway therethrough to the housing
such that the passageway coincides with
the first opening of the housing; and
20 attaching the second distal enclosure to the
longeron.

25